

D&D Subgroup Highlights

June 10, 1997

Jim Goodenough opened the meeting by introducing Ken Jackson as the new BHI representative for the subgroup.

Photogrammetry Presentation

Terry Meier of Meier Associates gave a vugraph presentation and demonstration of photogrammetry. Photogrammetry is one technique used in D&D characterization and planning. MACTEC and Meier have recently merged and have a 100 person staff in the Tri-Cities. Terry showed the subgroup a \$30K digital camera that they use for photogrammetry. This camera is used for facility characterization and video capturing also. In addition to photogrammetry, Meier Associates also has other specialized engineering services including 3D modeling, database linking, drawing conversion, and renderings and animations. Meier Associates has a number of software platforms for CAD and graphic services and a complete array of electronic communications capabilities.

Terry demonstrated SofDesk software that is used to represent photo survey results. One can use this software with an AUTOCAD system and scan old drawing into the new ones. Three dimensional representation can also be developed from this software. The usual process is to go through a facility with the camera and then back to the AUTOCAD system. The resulting photos can be used to show what the removal or addition of objects from the facility will look like. This technique results in an accurate and cost effective way to show the facility. It is quicker and better than drawings in that you can focus in on the area that the changes are in.

Photogrammetry is a one-time survey technique, thus minimizing downtime, that results in a permanent, easily accessible record that can be used to produce accurate construction documents. It captures the way the facility is now without needing to touch the facility at all. Terry described the survey process in detail and noted that it is quite accurate and can be done by a small group. The photo data collected is brought back to the computer where most of the work is completed.

Terry talked about high resolution digital photos. These are used to produce 3-D drawings or as-built drawings. The camera can be radiation hardened but you would most likely not be able to reuse the lens which costs \$15K. Terry showed photos made by this process of U-Plant after its removal and after a mounding of the plant which is an alternative disposal method.

Terry is going to work at Rocky Flats in a few weeks to do photogrammetry on two buildings that are scheduled for D&D. They need the drawings to be accurate to get an RFP out for industry bids. Terry showed some work that Meier did on modeling the K-Basins. The cost is now \$0.30-0.90 per ft³ for a building to be modeled via photogrammetry. Terry also showed how this technique could be used to train workers for removal of items from a building. Costs for photogrammetry are dropping as more companies are entering the field.

Communication Issues

Jim Goodenough invited Jeff Day, DOE-RL to this meeting but he was unable to attend this time. He will be at the next subgroup meeting. Jeff has worked on Capitol Hill in Washington DC and perhaps could provide some contacts for us in DC. Jim would like to see if we could do PR work like Dick Baker does out of the DOE-Chicago office. Jeff is in AME now on rotation. Need to get Jeff the communication plan for the STCG. The management council may be the right level to pursue this.

D&D Focus Area Response

Rick Gonzalez reported on the response from the D&D FA as to why we did not receive funding for the large scale demo proposals. They thought our schedules were too inflexible especially the 324 B-Cell cleanout. They also said there were no visible skyline changes and that the inclusion of HAMMER training was premature. RL keeping management control and including high level tanks clouded the issues.

Laser Demo Update

All laser cutting was stopped after a fire started due to the nylon hose rupturing. The fire destroyed part of the fiber optic cable but after wrapping the hose with fire proof material they restarted. Need to find out the performance specifications of the laser versus the baseline technology. The question was raised if the laser ran long enough to know if it will work over time at an acceptable level. Keith Pauley said they are looking at the effects of radiation on the laser system. The optics and cables are to be irradiated in the 318 Building using Cobalt 60. If the results are favorable, BWHC would let the hot cell work begin. It will be necessary to change the TTP to lengthen the schedule.

The previous problem with false stops due to fiber cable reliability has been solved by beefing up the feedback wires and end effectors. Since then the operators have stated that the laser system is operating faster and better. No work will be done in rad zones until the three weeks of irradiation are done on the system components and then a week of examination is completed. During the hot cell testing period, a carbon steel "pig" or storage box will be used to store the laser unit when not in use. A suggestion was made to see if a depleted uranium box could be used instead of carbon steel as Hanford has the depleted uranium available for use. Keith Pauley is leaving PNNL to take a job with a NASA subcontractor on the shuttle project. Keith will be gone by the end of June. Mark Mitchell will take Keith's place on the laser demo project.

X-Change 97 Update

For the symposium to be held at the end of November, Lloyd Piper has stated that eight slots may be funded by Hanford. So far PNNL has submitted three papers, BHI four papers, the Enterprise Center two papers, and FDH submittals are unknown at this time. The papers are being reviewed by the symposium committee now.

Large Scale Demo ICT Members

Jim Goodenough stated he will talk to Gary Huffman (DOE) from RF to see if we can get at least two Hanford personnel on the ICT for the new large scale glove-box demo. These would be BHI and BWHC personnel. Sue Garrett will also check on the contractor side to see if its possible also.

Meeting Attendees

Gary Ballew (PREC)
Ron Borisch (BWHC)
Jim Goodenough (DOE-RL)
Phil Gallagher (Meier)
Suzanne Garrett (PNNL)
Rick Gonzalez (DOE)
Ken Jackson (BHI)
Jim Jarrett (PNNL)
Terry Meier (Meier)
Steve Weakley (PNNL)
Jerry White (DCR)